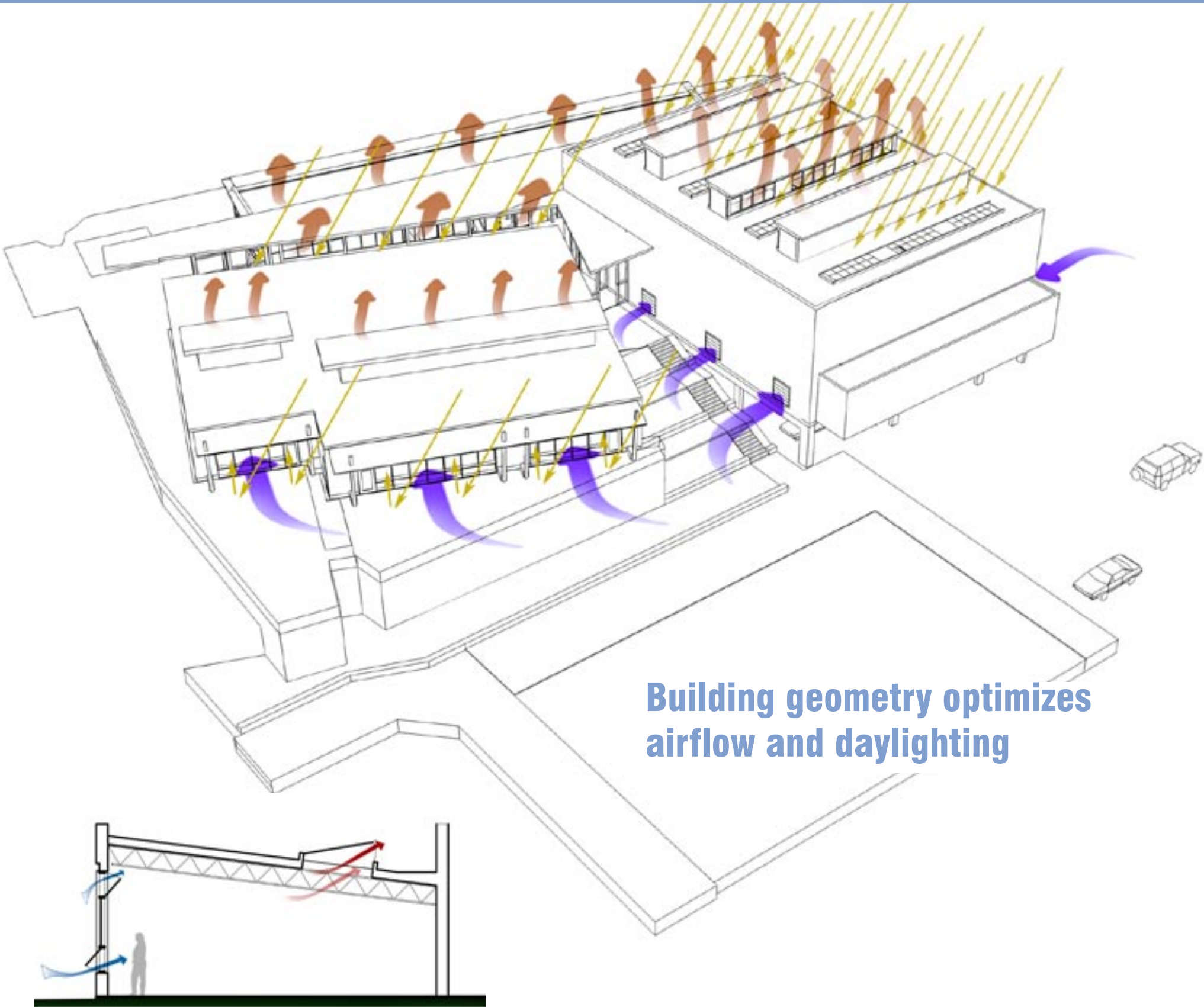


NATURAL COOLING:

Saving energy by helping outside air to move through the building



YESLER COMMUNITY CENTER



Building geometry optimizes airflow and daylighting

* North Block

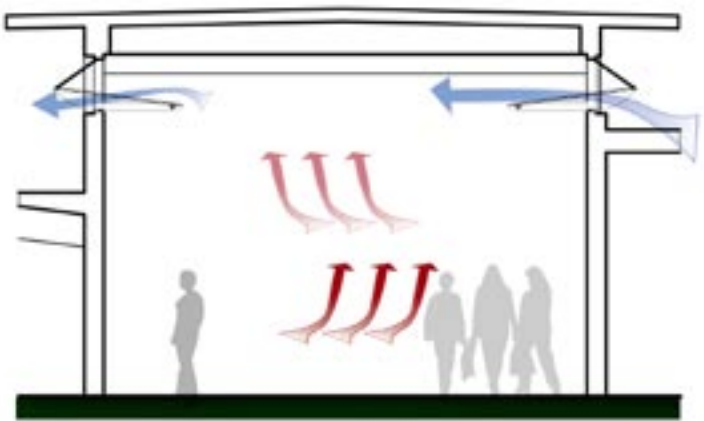
Computer, Office, Teen and Fitness Rooms:
Low windows, high windows and operable skylights combine to cool these spaces.

DESIGN STRATEGIES ENHANCE AIRFLOW

High and low windows:
Cool air enters through low windows then warms, rises and leaves the room through high windows. Windows on different sides of the room create cross ventilation - a breeze.

Very high openings:
Many rooms have skylights or roof monitors designed to let in light and induce “stack ventilation” -- using the buoyancy of warm air to move hot air up and out of the room.

Computer Models:
Mechanical engineers used computer modeling to predict temperature and airflow, ensuring that window openings match each rooms’ needs. The computer room has the most operable windows in order to compensate for computers’ generated heat.



* Commons Area

High motorized windows provide cross ventilation with north-south breezes.

Ceiling fans: On a really hot day or when lots of people are in the room, ceiling fans increase air movement and make you feel about 4 degrees cooler. Fans move air throughout the year to create an even temperature in all parts of the room.

Users’ responsibility: Making a naturally cooled building work requires action by its users! Just like steering a sailboat, you need to adjust the shades and open the windows and skylights to control the temperature.

Save Energy:

Window motors open high windows for optimum ventilation

Move Air:

Ceiling fans help cool and move air

Move Air:

Operable skylights allow warm air to escape while improving air flow



HOW TO KEEP ROOMS COOL OR WARM:

Buildings can be designed to move air through windows, vents and doors to reduce heat, bring in fresh air and reduce CO₂ accumulation. The Roman architect, Vitruvius, wrote about orienting buildings for wind and cross ventilation in 30 BCE.

USER TIPS: IF YOU’RE HOT OR STUFFY...

Open both the high and low windows in your room.

If your room has a skylight, check that it is open. Turn on the ceiling fans.